

Appln No. 10/520,325
Amdt date December 23, 2008
Reply to Office action of September 26, 2008

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A catheter insertion device comprising a hollow-cylindrical catheter hub having a catheter tube attached at a distal end thereof, a needle hub having a hollow needle attached thereto and extending through the catheter hub and the catheter tube when in a ready position, a needle guard element arranged displaceably on the needle in the catheter hub and having an engaging section which engages with an engaging means formed near the needle tip when the hollow needle is removed from the catheter hub, wherein a check valve is disposed between the catheter tube and the needle guard element in the catheter hub through which the hollow needle extends in the ready position and which automatically closes after the removal of the needle, and wherein the check valve remains in the catheter hub when the hollow needle is removed from the catheter hub and the catheter tube.
2. (Original) The device according to claim 1, wherein the catheter hub comprises a distal hub element and a proximal hub element, and the check valve is held between the distal hub element and the proximal hub element, which are joined to one another.
3. (Original) The device according to claim 1, wherein the check valve has a plurality of radially elastically expandable valve flaps configured to be moved into an open position by fluid pressure generated from a syringe.

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4. (Original) The device according to claim 1, wherein the catheter hub comprises an inner circumference and a radial projection projecting radially from the inner circumference, which is configured to engage with the needle guard element in the ready position.

5. (Currently Amended) The device according to claim 1, wherein the check valve comprises a valve disc, which has radial slits starting from a middle section of the valve disc, and a valve actuating element, [[,]] which is displaceably guided in the catheter hub and has a hollow space for receiving the needle guard element.

6. (Currently Amended) The device according to claim 5, wherein the valve actuating element is formed as a hollow cylinder with a truncated cone-shaped distal end section, and comprising two proximally extending legs defining the hollow space for receiving the needle guard therebetween.

7. (Currently Amended) The device according to claim 6, wherein the hollow cylindrical valve actuating element comprises an inner circumference and a radial projection ~~for positioning the needle guard element.~~

8. (Original) The device according to claim 5, wherein the valve actuating element has a truncated cone-shaped abutting section.

9. (Original) The device according to claim 1, wherein the needle guard element is formed as a spring clip which has diametrically opposite spring arms starting from a rear wall provided with a bore, wherein bent end sections of the spring arms overlap and block the needle tip when the engaging means of the needle comes to abut on the rear wall.

10. (Currently Amended) A catheter insertion device comprising:

a catheter tube attached to an end of a catheter hub, the catheter tube comprising a lumen and the catheter hub comprising an interior cavity;

a needle defining a needle axis attached to an end of a needle hub, said needle projecting[[,]] through the lumen of the catheter tube;

a valve for regulating fluid flow positioned inside the interior cavity of the catheter hub and in mechanical communication with a movable valve actuating element for opening the valve, and wherein the valve remains inside the interior cavity of the catheter hub when the needle is removed from the catheter tube and the catheter hub; and

a needle guard element comprising two needle guard arms crossing the needle axis of the needle positioned inside the catheter hub adjacent the valve in a ready position.

11. (Currently Amended) A catheter insertion device comprising:

a catheter tube attached to an end of a catheter hub, the catheter tube comprising a lumen and the catheter hub comprising an interior cavity;

a needle defining a needle axis attached to an end of a needle hub, said needle projecting[[,]] through the lumen of the catheter tube and comprising an engaging section near a needle tip;

a valve for regulating fluid flow positioned inside the interior cavity of the catheter hub, said valve comprising an opening and the needle projecting through the opening, and wherein the valve remains inside the interior cavity of the catheter hub when the needle is removed from the catheter tube and the catheter hub; and

a needle guard element comprising an opening adapted to contact the engaging section of the needle positioned between the valve and the needle hub[[.]]; and

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wherein a valve actuating element is slidably displaced in the interior cavity of the catheter hub for opening the valve.

12. (Previously presented) The catheter insertion device of claim 10, wherein the two needle guard arms cross one another.

13. (Previously presented) The catheter insertion device of claim 10, wherein the needle guard element comprises a proximal wall comprising an opening having the needle passing therethrough.

14. (Previously presented) The catheter insertion device of claim 10, wherein the valve is a disc having at least one slit formed therein.

15. (Currently Amended) The catheter insertion device of claim 10, ~~further comprising an actuating element for opening the valve, wherein the movable valve~~ actuating element comprises ~~ing~~ two plunger leg sections comprising a space therebetween for accommodating the needle guard.

16. (Previously presented) The catheter insertion device of claim 11, wherein the engaging section is crimp.

17. (Previously presented) The catheter insertion device of claim 11, wherein the needle guard further comprises at least one arm comprising an apex abutting a shoulder located on the interior surface of the catheter hub.

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18. (Previously presented) The catheter insertion device of claim 11, wherein the needle guard comprises two arms that intersect one another.

19. (Currently Amended) The catheter insertion device of claim 11, ~~further comprising an actuating element for opening the valve, wherein the valve actuating element comprises~~ing two ~~plunger~~ leg sections comprising a space therebetween for accommodating the needle guard.

20. (Previously presented) The catheter insertion device of claim 11, wherein the needle guard is made from a metal material.

21. (New) The device according to claim 1, further comprising a valve actuating element formed as a hollow cylinder with a truncated cone-shaped distal end section, with two legs extending proximally therefrom, the two proximally extending legs defining a space therebetween configured for receiving the needle guard element.

22. (New) The device according to claim 21, wherein the catheter hub comprises a diameter variation on an inner circumference of the catheter hub located between a distal end and a proximal end of the valve actuating element.

23. (New) The catheter insertion device according to claim 10, wherein the movable valve actuating element is formed as a hollow cylinder with a truncated cone-shaped distal end section, comprising two proximally extending legs defining a space therebetween configured to receive the needle guard element.

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24. (New) The catheter insertion device according to claim 10, wherein the catheter hub comprises a diameter variation on an inner circumference of the catheter hub located between a distal end and a proximal end of the valve actuating element when in the ready position.

25. (New) The catheter insertion device according to claim 11, wherein the valve actuating element is formed as a hollow cylinder with a truncated cone-shaped distal end section, comprising two proximally extending legs defining a space therebetween configured for receiving the needle guard element therebetween.

26. (New) The catheter insertion device according to claim 11, wherein the catheter hub comprises a diameter variation on an inner circumference of the catheter hub located between a distal end and a proximal end of the valve actuating element when in the ready position.